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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/602,113

06/23/2003

Eugene F. Young

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MILA KASAN, PATENT DEPT.
APPLIED BIOSYSTEMS
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FOSTER CITY, CA 94404

EXAMINER

HYUN, PAUL SANG HWA

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

10/16/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/602,113

Applicant(s)

YOUNG ET AL.

Examiner

Paul S. Hyun

Art Unit

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 and 46 is/are pending in the application.
- 4a) Of the above claim(s) 1-18 and 27-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-26, 38-42 and 46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

REMARKS

Claims 1-42 and 46 remain pending. Claims 1-18 and 27-37 remain withdrawn for being directed toward non-elected inventions. In summary, claims 19-26, 38-42 and 46 remain pending for prosecution.

Despite Applicants' arguments, the art rejections are maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims **19-21, 23, 26, 38 and 46** are rejected under 35 U.S.C. 103(a) as being unpatentable over Cassin et al. (US 5,910,287) in view of Gilby (US 6,239,871 B1).

Cassin et al. disclose a multi-well plate comprising a lid on top of the plate and lenses formed on the bottom of the wells of the plate (see lines 40-67, col. 6). The lens can be used to facilitate fluorescence measurements (see lines 5-25, col. 16) wherein the measurement utilizes excitation optics for exciting the fluorescent compounds and collection optics for collecting the fluorescence. The multi-well plate disclosed by Cassin et al. differs from the claimed invention in that the reference does not disclose aplanatic lenses. The reference also does not disclose a single lens that can both excite and collect the fluorescence.

Gilby discloses a lens for conducting fluorescent measurements. It discloses a planar-convex lens 100 that is aplanatic for eliminating spherical aberration (see Fig. 3 and Abstract). The lens comprises a rounded portion as well as a projection. The lens is capable of exciting the fluorescent compound and collecting the fluorescence emitted by the compound (see Fig. 4). In light of the disclosure of Gilby, it would have been obvious to one of ordinary skill in the art to provide an aplanatic plano-convex lens to the bottom of the wells of the plate disclosed by Cassin et al. so that a single lens can be used to conduct the fluorescence measurements. The lens would also eliminate spherical aberration.

With respect to claim 23, although Cassin et al. do not explicitly disclose the structure of the lid, flat well-plate lids are well known in the art. Therefore, it would have been obvious to one of ordinary skill in the art to provide a flat lid to the well-plate disclosed by Cassin et al.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cassin et al. in view of Gilby as applied to claims 19-21, 23, 26, 38 and 46, and further view of Trost (US 6,066,245).

Neither Cassin et al. nor Gilby disclose a lens with a frusto-conical projection member. However, Cassin et al. do disclose that the wells of the well-plate can be of any shape (see lines 50-65, col. 6). Therefore, it would have been obvious to taper the wells of the modified well-plate disclosed by Cassin et al. and Gilby to facilitate the pipetting of the samples from the wells.

Furthermore, Trost discloses a plano-convex lens 102 for conducting fluorescence measurements (see Fig. 1). The lens comprises a round portion and a cylindrical projection portion. Given that the lens disclosed by Trost performs the same function as the lens disclosed by Gilby, it would have been obvious to provide the lens disclosed by Trost to the bottom of the wells of the modified plate disclosed by Cassin et al. instead of the lens disclosed by Gilby. It also would have been obvious to taper the projection portion of the lens disclosed by Trost such that it becomes frusto-conical to accommodate the shape of the tapered wells.

Claim **24** is rejected under 35 U.S.C. 103(a) as being unpatentable over Cassin et al. in view of Gilby as applied to claims 19-21, 23, 26, 38 and 46, and further in view of Warhurst et al. (US 6,896,848 B1).

Neither Cassin et al. nor Gilby disclose a metallic member.

Warhurst et al. disclose a flat cover adapted to seal the wells of a microtiter plate (see Fig. 1). The reference discloses that the cover can be made from a metal (see lines 65-67, col. 2).

In light of the teachings of Warhurst et al., it would have been obvious to one of ordinary skill in the art to provide a metallic cover to the wells of the modified plate disclosed by Cassin et al. and Gilby since metal is very strong.

Claim **25** is rejected under 35 U.S.C. 103(a) as being unpatentable over Cassin et al. in view of Gilby as applied to claims 19-21, 23, 26, 38 and 46, and further in view of Sha et al. (US 2003/0235519 A1).

Neither Cassin et al. nor Gilby disclose a cover that is made from polypropylene.

Sha et al. disclose a flat cover adapted to seal the wells of a microtiter plate (see Fig. 4B). The reference discloses that the cover can be made from a transparent polypropylene (see [0027]).

In light of the teachings of Sha et al., it would have been obvious to one of ordinary skill in the art to provide a transparent polypropylene cover to the wells of the modified plate disclosed by Cassin et al. and Gilby since polypropylene is a resilient plastic.

Claims **40-42** are rejected under 35 U.S.C. 103(a) as being unpatentable over Cassin et al. in view of Gilby as applied to claims 19-21, 23, 26, 38 and 46, and further in view of Hijikata (US 3,932,132).

Neither Cassin et al. nor Gilby disclose an elongate portion.

Hijikata discloses an optical system adapted to detect particular analytes in a fluid. The system comprises a transparent reagent carrier 11 on which an absorptive reagent is disposed, a lamp 12a for projecting light onto the reagent, and a tubular light guide 12c that guides the light emitted by the lamp to the reagent carrier (see Fig. 2). The light guide focuses all the light emitted by the lamp towards the reagent carrier.

In light of the teachings of Hijikata, it would have been obvious to one of ordinary skill in the art to provide the modified plate disclosed by Cassin et al. and Gilby with a light guide to guide the light projected into the wells.

Claims **19 and 39** are rejected under 35 U.S.C. 103(a) as being unpatentable over Cassin et al. in view of Schroeder et al. (US 5,355,215) and as evidenced by Claytor (US 4,787,722).

As indicated above, Cassin et al. disclose a microplate for conducting fluorescence measurements. However, Cassin et al. do not disclose a Fresnel lens.

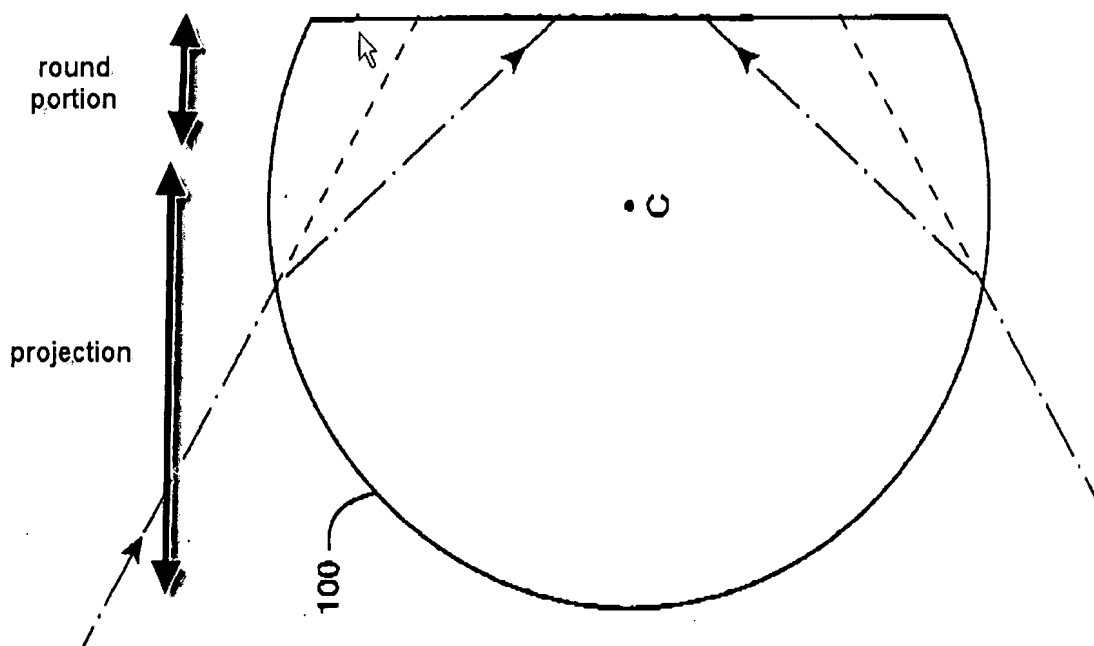
Schroeder et al. disclose a well-plate for conducting fluorescence measurements. The well-plate comprises Fresnel lenses on the bottom of the wells for exciting and collecting fluorescence (see Fig. 6 and lines 25-45, col. 6). Claytor discloses that Fresnel lenses are inherently aplanatic (see lines 10-15, col. 1). Furthermore, the lens shown by Claytor comprises a rounded portion as well as a projection. In light of the disclosure of Schroeder et al. and Claytor, it would have been obvious to one of ordinary skill in the art to incorporate Fresnel lenses to the bottom of the wells of the plate disclosed by Cassin et al. since Fresnel lenses are aplanatic and thus prevent spherical aberration.

Response to Arguments

Applicant's arguments with respect to the art rejections have been fully considered but they are not persuasive.

Claim rejections under 35 U.S.C. 103(a) as being unpatentable over Cassin et al. in view of Gilby:

First, Applicants argue that the references fail to disclose all the claimed limitations. Specifically, Applicants argue that the references fail to disclose a plurality of aplanatic lenses, each lens comprising a rounded portion and a projection that extends into the sample. This argument is not persuasive. With respect to the plurality of lenses, Cassin et al. disclose that the microplate can comprise a plurality of wells (e.g. 864, 1536, 3456 or 9600 wells), and that a lens can be formed on a well bottom (see lines 47-67, col. 6). Based on the disclosure, it is evident that the microplate disclosed by Cassin et al. comprises a plurality of lenses. With respect to the shape of the lenses (i.e. rounded portion and a projection), Cassin et al. fail to disclose such a lens. However, Gilby remedies the deficiency. Gilby discloses the use of an aplanatic lens for conducting fluorescence measurements. As shown in Figure 3 of Gilby, an aplanatic lens 100 comprises a round portion as well as a projection.



Applicants also argue that the combination of Cassin et al. and Gilby is improper. Specifically, Applicants argue that the disclosure of Cassin et al. is directed towards optical detection using lenses formed at the bottom of a microplate whereas the disclosure of Gilby is directed towards the use of a lens situated outside of a capillary. This argument is not persuasive. Although Cassin et al. do not disclose the type of lens that can be incorporated into the microplate, one of ordinary skill in the art would recognize that different types of lenses could be used, depending on the type of optical measurement used to analyze the contents of the well. Gilby discloses the use of an aplanatic lens for conducting fluorescence measurements because aplanatic lenses eliminate spherical aberration, thereby improving efficiency (see Abstract). This is sufficient motivation to incorporate an aplanatic lens to the bottom of each well of the microplate disclosed by Cassin et al. Applicants' argument that the lens disclosed by

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Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul S. Hyun whose telephone number is (571)-272-8559. The examiner can normally be reached on Monday-Friday 8AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571)-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1797

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PSH
10/11/07


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